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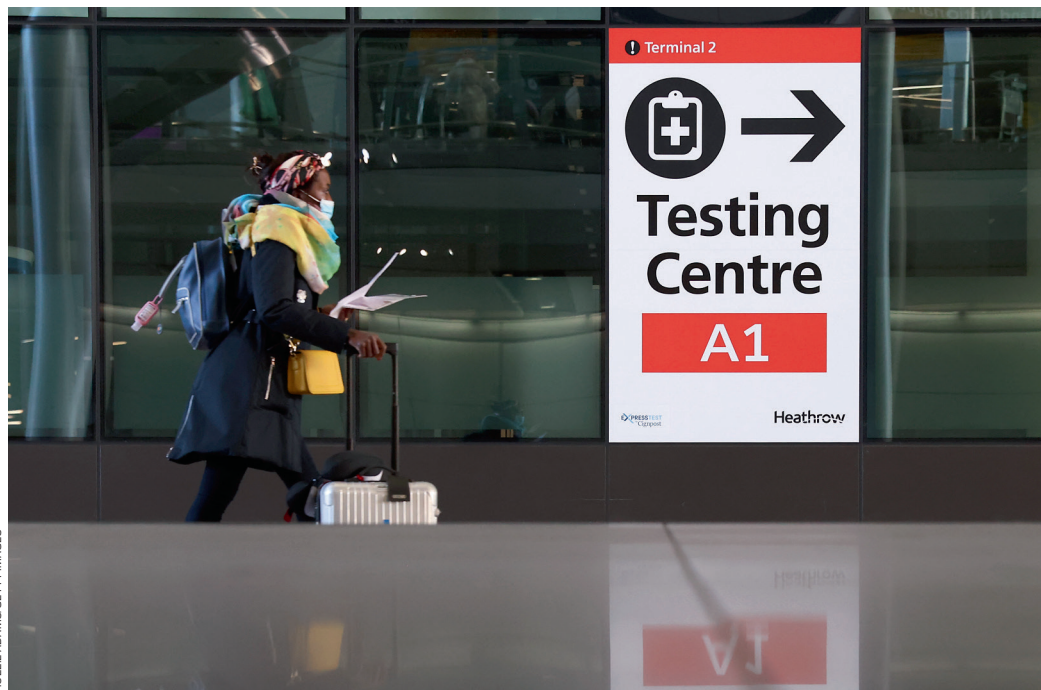
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**A sign at London’s Heathrow Airport on 28 November**

Researchers are concerned by the variant’s high number of mutations. There are more than 30 of these in the spike protein, the part of the virus that interacts with human cells, enabling it to enter them, as well as mutations elsewhere in the genome. The virus’s mutations could change how transmissible the virus is or the effect of treatments and vaccines, according to the UK Health Security Agency. But the body notes that “this has not been proven”.

Such thinking about the potential impact of the virus’s mutations is based on past SARS-CoV-2 mutations rather than lab tests. “It’s important to stress how much we don’t know about this new variant,” says Sharon Peacock at the University of Cambridge.

Wendy Barclay at Imperial College London says “we don’t really know” if omicron will reduce the effectiveness of vaccines. However, the number of changes on the variant’s spike protein theoretically means that the effectiveness of antibodies produced by covid-19 vaccines would be reduced, she says.

Stéphane Bancel, chief executive of covid-19 vaccine-maker Moderna, has predicted that omicron will cut the efficacy of existing vaccines.

The new variant is also expected to be more resistant to antibody treatments such as those developed by Regeneron. “That is really a cause for concern,” says Barclay.

Tedros Adhanom Ghebreyesus at the WHO said on 29 November that omicron’s emergence shows that high-income countries must do more to donate vaccines to lower-income ones. “The longer vaccine inequity persists, the more opportunity this virus has to spread and evolve,” he said. ■

**Covid-19**

## Omicron emerges

The discovery of a highly mutated coronavirus variant in South Africa has triggered a global scramble, reports **Adam Vaughan**

THE omicron variant, which was designated a covid-19 variant of concern by the World Health Organization (WHO) on 26 November, has triggered travel restrictions, a race to accelerate booster vaccination programmes and renewed calls to address vaccine inequity.

According to the WHO on 29 November, omicron poses a “very high” risk globally, and preliminary evidence suggests that it might be a more transmissible variant, which could lead to surges of infection.

Countries including the UK, US and European Union member states have rushed to impose travel restrictions on southern African countries. Some went

even further: Israel and Japan have effectively sealed their borders to foreign visitors.

South Africa’s president Cyril Ramaphosa said he was “deeply disappointed” by the responses, and that the country was being punished rather than rewarded for its genomic surveillance.

Fears that the variant may undermine the efficacy of covid-19 vaccines have also led the UK and US to announce an acceleration of booster jab roll-outs, in the hope that more antibodies will provide better protection (see page 8).

The UK has also tightened rules around PCR tests for people entering the country, as well as bringing in self-isolation for contacts of suspected omicron

cases and adding 10 southern African countries to the red list for travel. Mask-wearing has been reinstated in shops and on public transport in England.

New cases have been found around the world, from Australia and Canada to Hong Kong and Israel. The variant has been detected across Europe, including at least 13 cases in the Netherlands and 22 in the UK, as of 30 November.

Omicron was first identified on 23 November in South Africa by researchers using genome sequencing to investigate a puzzling surge in case numbers there. Daily cases went from 274 on 11 November to 1000 a fortnight later, and currently number more than 2000.